ABSTRACT OF THE DISCLOSURE

The invention includes compositions and methods useful for treatment of a virus infection in a mammal by double-targeting the virus (i.e. targeting the virus at more than one stage of the virus life cycle) and thereby inhibiting virus replication. The compositions of the invention include compounds, which comprise a phosphocholine moiety covalently conjugated with one or more therapeutic agents (e.g. nucleoside analogue, protease inhibitor, etc.) to a lipid backbone. The invention also includes pharmaceutical compositions for use in treatment of a virus infection in mammals. The methods of the invention comprise administering a compound of the invention, a pharmaceutically acceptable salt or a prodrug thereof, or a pharmaceutical composition of the invention, in an amount effective to treat the infection, to a mammal infected with a virus. Additionally, the invention includes compositions and methods useful for combating a cancer in a mammal and facilitating delivery of a therapeutic agent to a mammalian cell. The compositions of the invention include compounds, which comprise an alkyl lipid or phospholipid moiety covalently conjugated with a therapeutic agent (e.g., a nucleoside analogue). The invention also includes pharmaceutical compositions for combating cancer and facilitating delivery of a therapeutic agent to a mammalian cell. The methods of the invention comprise administering a compound of the invention, a pharmaceutically acceptable salt or a prodrug thereof, or a pharmaceutical composition of the invention, in an amount effective to combat a cancer or to facilitate delivery of a therapeutic agent to a mammalian cell.